

Animals Expressing Exogenous IGF-1 in  
Their Milk

Inventor: Wheeler, et al Filed: 9/30/03  
USSN: Not yet assigned Atty Dkt 66-00A

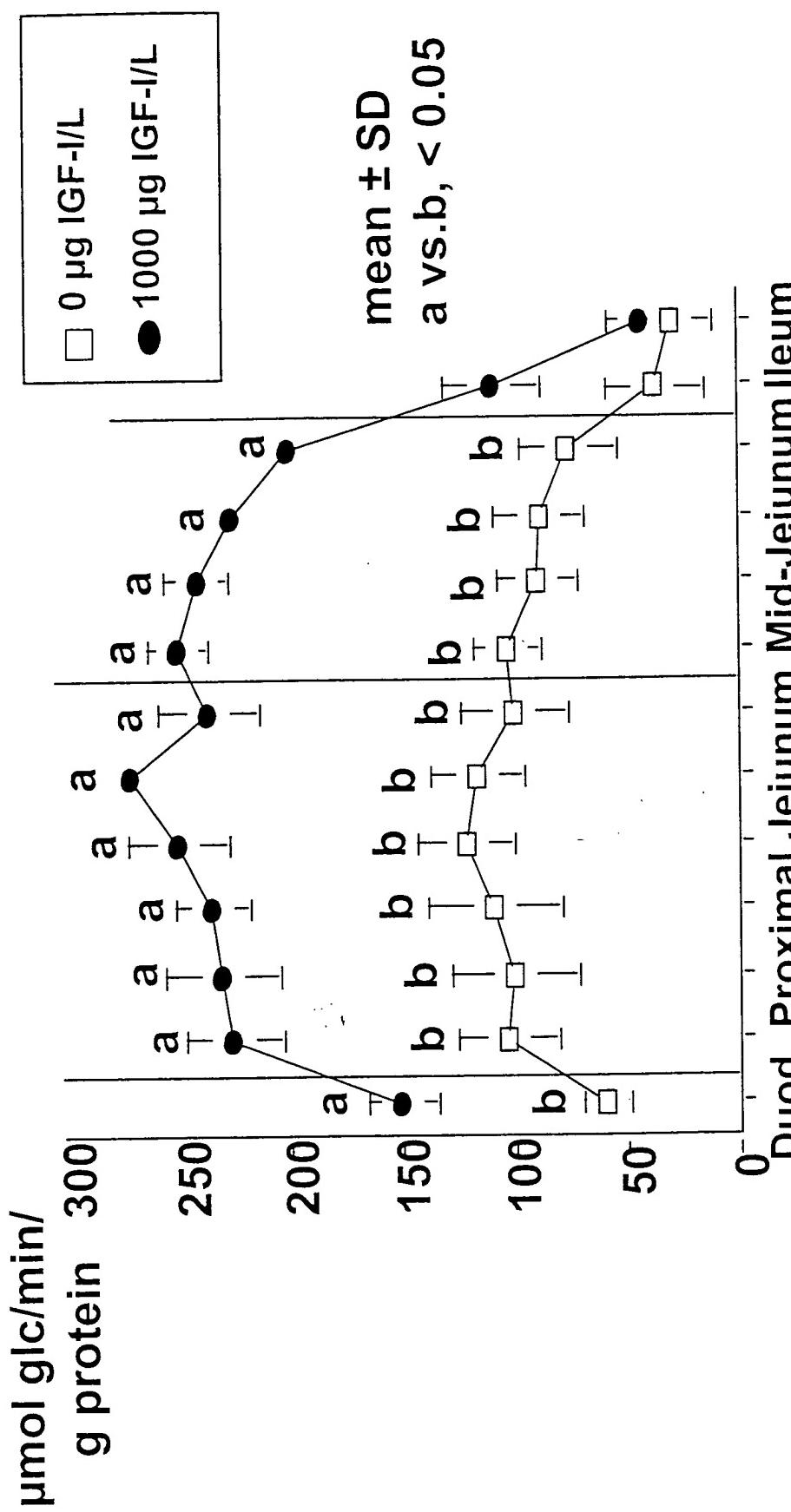


Figure 1

Animals Expressing Exogenous IGF-1 in  
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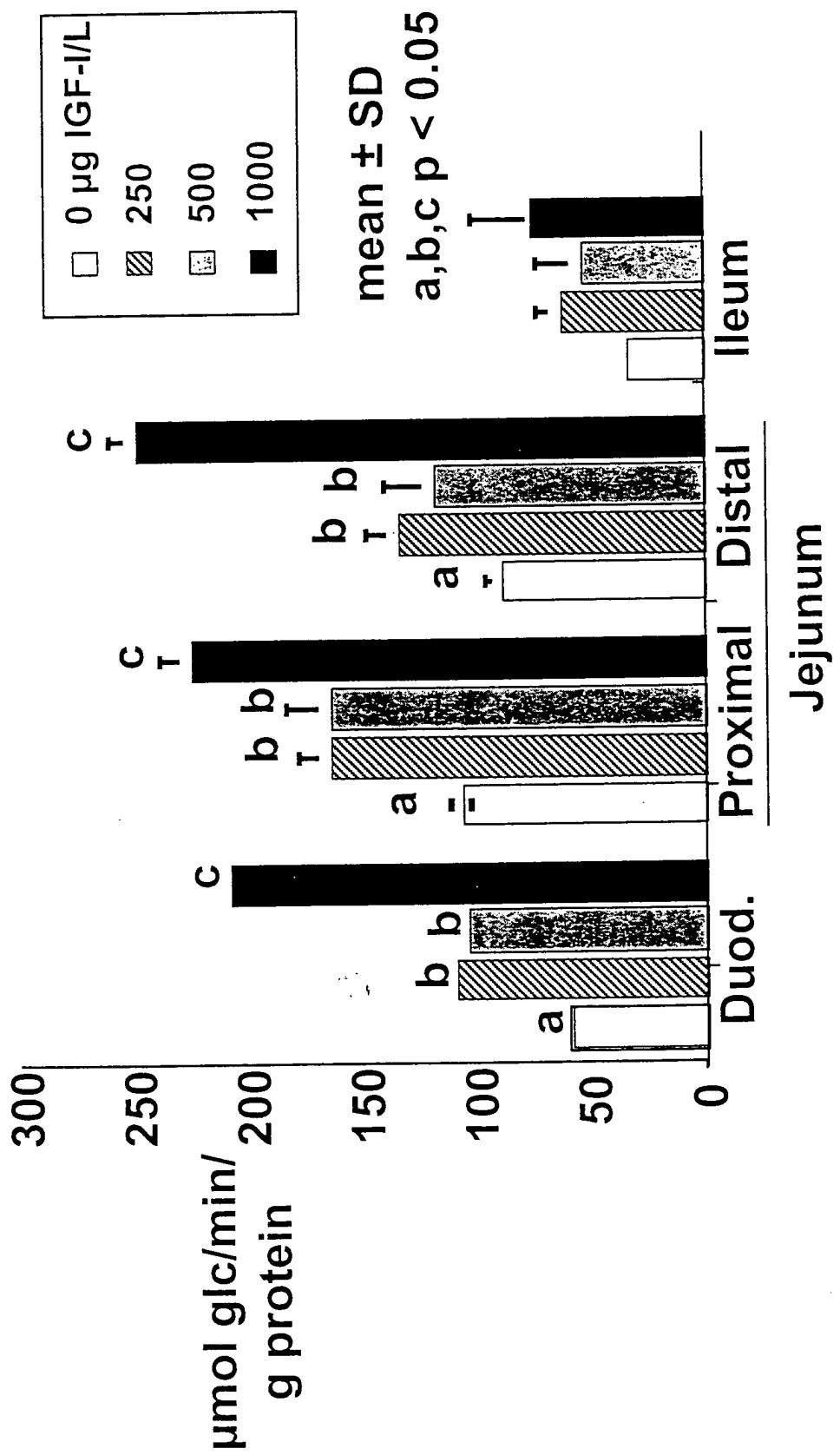


Figure 2

Animals Expressing Exogenous IGF-1 in  
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SEQ ID NO:1

1 GATCAGTCCTGGTGGTCATTGAAAGGACTGATGCTGAAGTTGAAGCTCC  
51 AATACTTTGCCACCTGATGCGAAGAACTGACTCATGTGATAAGACCCCTG  
101 ATACTGGGAAAGATTGAAGGCAGGAGGAGAAGGGATGACAGAGGATGGAA  
151 GAGTTGGATGGAATACCAACTCGATGGACATGAGTTGAGCAAGCTTCC  
201 AGGAGTTGGTAATGGCAGGGAAGCCTGGCGTGTGCAGTCCATGGGTT  
251 GCAAAGAGTTGGACACTTGAGTGACTGAACTGAACTGATAGTGTAAATC  
301 CATGGTACAGAATATAGGATAAAAAGAGGAAGAGTTGCCCTGATTCTG  
351 AAGAGTTGTAGGATATAAAAGTTAGAATACCTTAGTTGGAAAGTCTTA  
401 AATTATTTACTTAGGATGGGTACCCACTGCAATATAAGAAATCAGGCTTT  
451 AGAGACTGATGTAGAGAGAATGAGGCCCTGGCATACCAGAAGCTAACAGCT  
501 ATTGGTTATAGCTGTTACAACCAATATAACCAATATATTGGTTATATA  
551 GCATGAAGCTTGATGCCAGCAATTGAAGGAACCATTAGAACTAGTATC  
601 CTTAAACTCTACATGTTCCAGGACACTGATCTTAAAGCTCAGGTTCAGAAT  
651 CTTGTTTATAGGCTCTAGGTGTATATTGTGGGCTTCCCTGGCTCA  
701 GATGGTAAAGTGTCTGCCTGCAATGTGGGTGATCTGGGTTGATCCCTGG  
751 CTTGGGAAGATCCCCTGGAGAAGGAAATGGCAACCCACTCTAGTACTCTT  
801 ACCTGGAAAATTCCATGGACAGAGGAGCCTGTAAGCTACAGTCCATGGG  
851 ATTGCAAAGAGTTGAACACAACGTGAGCAACTAACGCACAGCACAGTACAGT  
901 ATACACCTGTGAGGTGAAGTGAAGTGAAGGTTCAATGCAGGGTCTCCTGC  
951 ATTGCAGAAAAGATTCTTACCATCTGAGCCACCAGGGAAGCCAAGAATA  
1001 CTGGAGTGGTAGCCTATTCTCCAGGGATCTTCCATCCAGGAA  
1051 TTGAACCTGGAGTCTCCTGCATTCAAGGTGGATTCTCACAGCTGAACTA  
1101 CCAGGTGGTACTACTCCAATATTAAAGTGCTTAAAGTCCAGTTTCCA  
1151 CCTTCCAAAAAGGGTGGGTCACTCTTTAACCTTCTGTGGCCTACT  
1201 CTGAGGCTGTCTACAAGCTTATATATTATGAACACATTATTGCAAGTT  
1251 GTTAGTTTAGATTACAATGTGGTATCTGGCTATTAGTGGTATTGGT  
1301 GTTGGGATGGGGAGGCTGATAGCATCTCAGAGGGCAGCTAGATACTGTC  
1351 ATACACACTTTCAAGTTCTCATTGGTAAATAGAAAGTCTGGAT  
1401 CTAAGTTATATGTGATTCTCAGTCTGTGGTCAATTCTATTACTCC  
1451 TGACCACTCAACAAGGAACCAAGATATCAAGGGACACTTGTGTTCA  
1501 TGCCTGGGTTGAGTGGGCCATGACATATGATGATGTACAGTCCTTCCA  
1551 TATTCTGTATGTCTCTAACAGAGGAAGGAGGAGTGGCCGTGGACCCTTGT  
1601 GCATTTCTGATTGCTTCACTGTATTACCCCTGAGGCCCTTGT  
1651 TGAAATAGGGTGGCACATCTGCTTCTAGAACCAACACTACCAGAAC  
1701 AACATAAATAAAGCCAAATGGGAAACAGGATCATGTTGAAACACTCTT  
1751 GGGCAGGTAACAATACCTAGTATGGACTAGAGATTCTGGGAGGAAAGGA  
1801 AAAGTGGGTTGAAATTACTGAAGGAAGCTCAATGTTCTTGT  
1851 ACTGGCCTCTTGTCTCATTGATGTAAGGCTTGATGCCAGGG  
1901 CCCCTAACGGCTTTCCAAATAAAAGGAGGTGAGCAGTGTGGTGACCC  
1951 CATTTCAGAATCTTGAGGGTAACGAATTCTAACCAAAATGATGTCCTT  
2001 GTCTCTCTGCTCCTGGTAGGAATCCTATTCCATGCCACCCAGGCTGGACC  
2051 GGAGACGCTCTGCAGGGCTGAGCTGGATGCTCTCAGTTGTGTG  
2101 GAGACAGGGGATTATTCAACAAGGCCACAGGGTATGGATCCAGCAGT  
2151 CGGAGGGCGCCCCAGACAGGCATGTGGATGAGTGCTGCTCCGGAGCTG  
2201 TGATCTAAGGAGGCTGGAGATGTATTGCGCACCCCTAAAGCCTGCCAAGT

Figure 3 - 1

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2251 CAGCTTGATAGCTGACGGATCCCCAAAATGTGAGGTGTTCCGGGAGCTG  
2301 AAAGACTTGAAGGGCTACGGAGGTGTCAGTTGCCTGAATGTGAGTTCCC  
2351 TGCTATTGCTTGTCCCATAATTCATCCTCTTCACTCTTCCCTCCAT  
2401 TCTCTTCATCCTCTTTCCCCCTCTACTTTAATTATCAAACAATTCTCT  
2451 TATTGTTACTCTTTATTACATTATTTATCTGCCTCTCCTTTCCC  
2501 ATTGTCTGATCCTTGGAACTCTTTCACCTAACAGATACTCTGTGGT  
2551 CTGCCATATTGGAGATTGGTGGAGAGCCTTTCGGTCTGGGAATACA  
2601 GGTCTCATTTATGCTATACATGAACATCCTGTGAAATCTCTTTCGT  
2651 CTTCTTCAGGGCTGTGACCGCTTCATACCAGTGGTTATGACACAC  
2701 AAGCCATAGTACAAAACAATGACAGCACAGAACATGGACTCTTCAGATA  
2751 AATAATAAAATTGGTGCAAAGACGACCAGAACCCCTCACTCAAGCAACAT  
2801 CTGTAACATCTCCTGTGACAGTGAAGTAACCTCTTTACTCTGTCTGT  
2851 GTTTCTGAAACCTACTCCTGGATAACCTCTTTTTGGTGTGAAG  
2901 CACACCTCTGGCTTCACTGCCTTGGACTCCAATTAACTGTGGGACTTGA  
2951 TAATACCGAGTAAGAGGCTCTAGAATTTCATTAACACTAAATCCCCA  
3001 GACAGTTCTTAAAGTCCTGGTAGGTGACCTGAGCTGTTGGGATCT  
3051 TGATGTATAATACCCGTATTTCAGACTAAGTTGGTTGATGAAGTTGAT  
3101 AATTCTAAGGAGCTGCCAGAGAACAGAGAAGGGAGTCCTTACCTAGGGA  
3151 TAGGCATTACTGTATTAAATTCTCACCCAGAACAGGCAACAGGCATAAGCC  
3201 TCTAGTTAGAGAAAACCAGAGAACAGAGGAAATTCTATTATCCTCTGGT  
3251 AATACTTAGCTCTCATTTTCCACCAGAGGCTCTGCCAGAGTTCT  
3301 GGATGATGATCTTACTGATGACATTATGTGTGTCAGAACAGATTCTGGATA  
3351 AAGTAGGAATTAACTACTGGTAGTCACCTCTTACTTCACTTAATCT  
3401 TTCCCTCTCTTCTTCAGTCCTTCCAGCCTACTAATCTCCTTCTC  
3451 TCTATTCTGGTCTTTAAGCTAGAATGTAATCTAAAAACAAAATCA  
3501 TCAAGCAGACTCCGGTTCCAATTGGTAGAGCTTCACTTACTCCTACTCCG  
3551 TTAGCAATTTCCTACCTAAGGGCTCTAACAGAGGCTGAGATCCAGGA  
3601 TTTCTTCACCAGGACTTGAAACATCTAATTCTACTTGTCTAGTCTACAT  
3651 CCTAAGGCACGCCCTTGACCACTGCCCGCAATTCTGGAGTTAA  
3701 AAAATGGACCTTACTCCACTAAGTGGCTCAGTGTCTAGCCATGTGGCT  
3751 AGGAAAGTCTGTCTGTAATTAAACCCACAGTCTCACCTCAGCCTTCC  
3801 TGGGGATAAAGCTAGATGTAATCTAACCAAGATCCTGTCAGTAATTGCT  
3851 CTTGTCTCCTTCTCATGATCAGGTTGGCCCTAACAGCACTCTGTCTGA  
3901 GAAGCTGGATCAGTGGCTCTGTGAGAAGTTGTAACACCTGCTGTCTTGC  
3951 CTGCTTCTGCTCTTCTGTTCTGTCCTGGAACCTCTGCCCGTGGCTACC  
4001 TCGTTTGCTTCTTGTACCCCTTGAAGCTAACCTGCTCTGAGCCCTG  
4051 GCCCTGTAGTGACAATGGACATGTAAGGACTAACCTCAGGTGTGCATG  
4101 AATGGCGCTCTGGACTTTGACCCCTGCTCGATGTCCTGATGGCGCTTT  
4151 TAATGCAACAGTACATATTCCACTTTGTCCTGAAATAAAAAGCCTGATT  
4201 TGAGTGGCTGGCTGTATTCTTCTGTTGGAGAGGGAGGAAATAGGGT  
4251 GAGTAGGTAGACCTGGCCATGGTCACAGACCCCTCATCTCTACTAAAG  
4301 AGGATAGAGAGGCTGAACTTATAACAACTCAAAGATGGAGATTACTTCT  
4351 GTATTAATTCAATTCAACAGAGTATTGATCACCTAGCATAATTAAA  
4401 GAGCTATGGAGGGATCTAAAGTTGACTAAAGCATCTTACCTAAACT  
4451 GCTGCTAAGTCACTTCAGTTGTGTCGACTCTGTGTGACCCCATAGACGG  
4501 TAGCCCACAAGGCTCCATGTCCCTGGAATTG

Figure 3 - 2

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1-1951	Bovine a-Lactalbumin 5' Flanking Region/Promoter Region
1952	Bovine -Lactalbumin Transcription Start Point
1989-2045	Bovine a-Lactalbumin Signal Peptide Coding Region
2046-2255	Human/Bovine/Porcine IGF-I Coding Region
2256-2258	IGF-I Stop Codon
2259-2340	Cloning Sites and Bovine a-Lactalbumin 3' End of Exon 1
2341-2661	Bovine a-Lactalbumin Intron 1
2662-2820	Bovine a-Lactalbumin Exon 2
2821-3294	Bovine a-Lactalbumin Intron 2
3295-3369	Bovine a-Lactalbumin Exon 3
3370-3873	Bovine a-Lactalbumin Intron 3
3874-4203	Bovine a-Lactalbumin Exon 4
4204-4532	Bovine a-Lactalbumin 3' Flanking Region

**SEQ ID NO:2**

1       GGACCGGAGACGCTCTGCAGGGCTGAGCTGGTGGATGCTCTTCAGTTCGT  
51      GTGTGGAGACAGGGATTATTTCAACAAGCCCACAGGGTATGGATCCA  
101     GCAGTCGGAGGGCGCCCCAGACAGGCATCGTGGATGAGTGCTGCTCCGG  
151     AGCTGTGATCTAAGGAGGCTGGAGATGTATTGCGCACCCCTAAAGCCTGC  
201     CAAGTCAGCT

**Figure 3 - 3**

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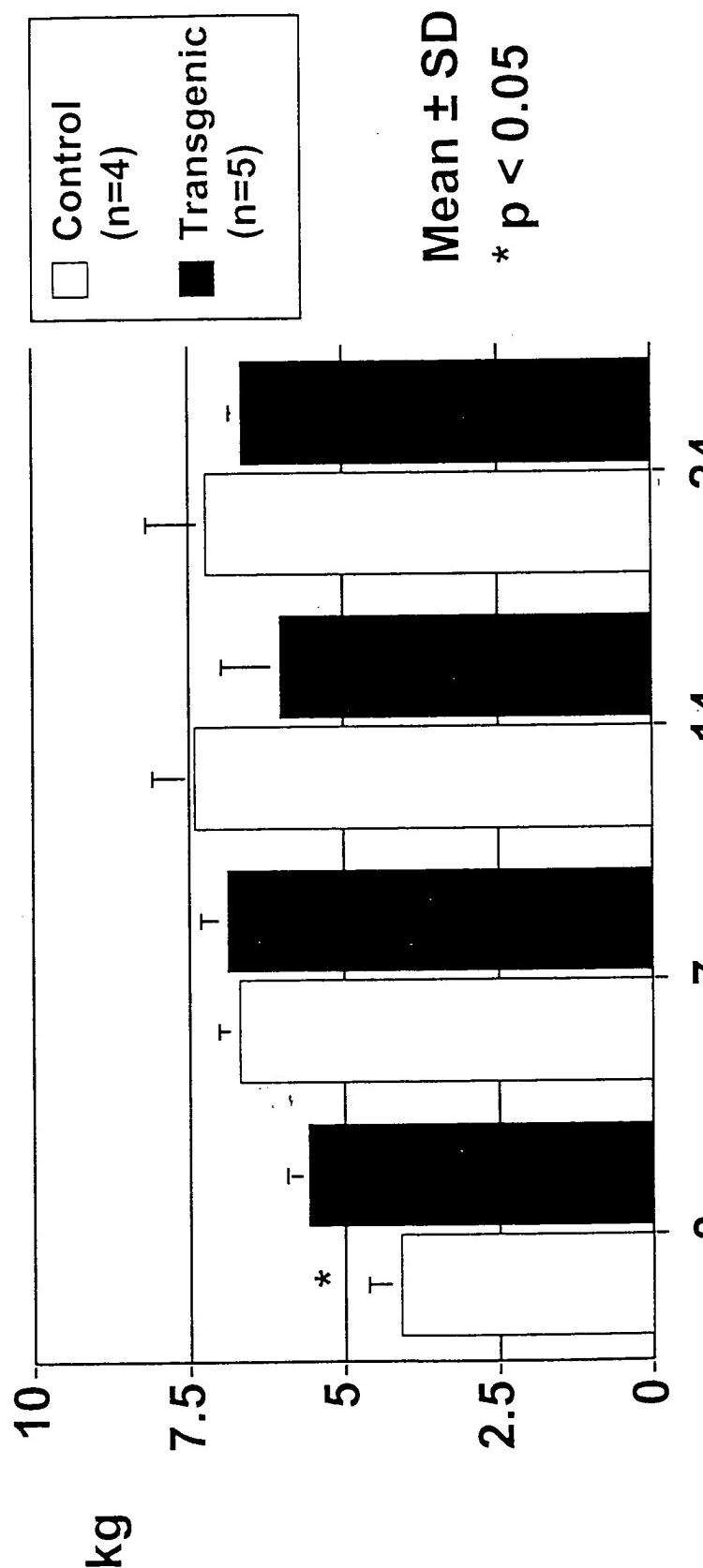
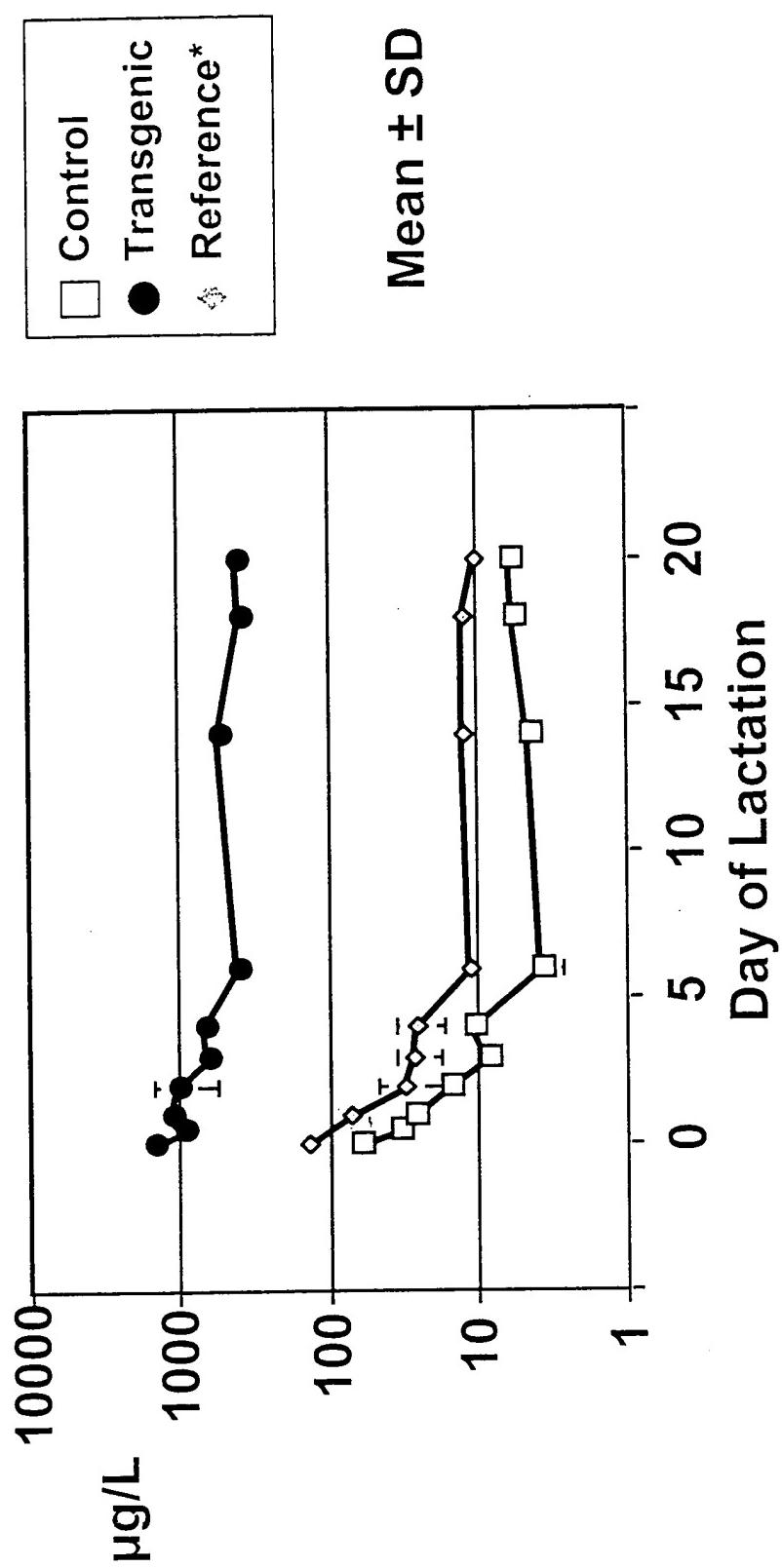


Figure 4

Animals Expressing Exogenous IGF-1 in  
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\* York-Duroc cross-bred sows (Donovan et al. *Pediatric Research* 1994; 36:159-163)

**Figure 5**

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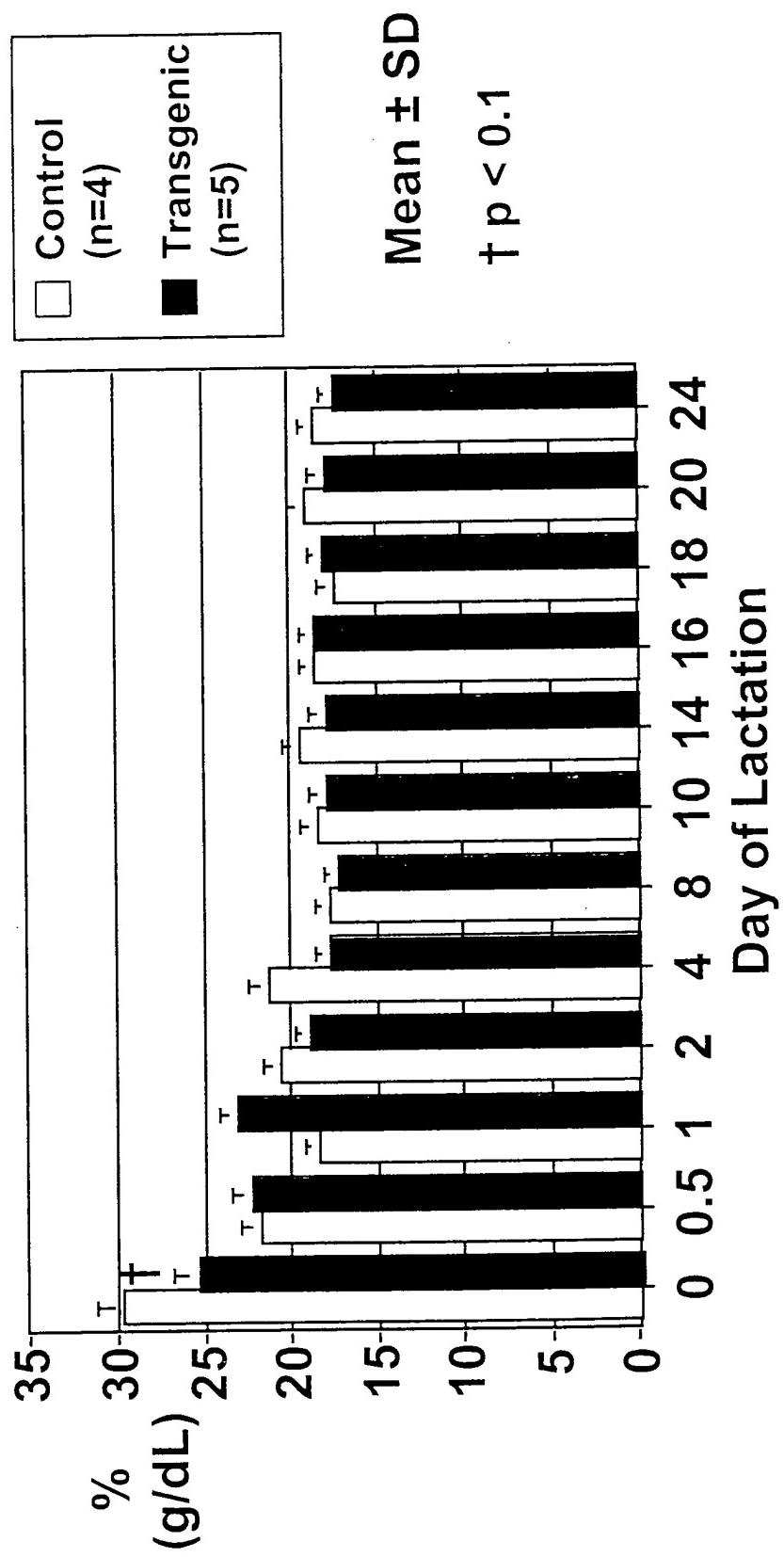


Figure 6

Animals Expressing Exogenous IGF-1 in  
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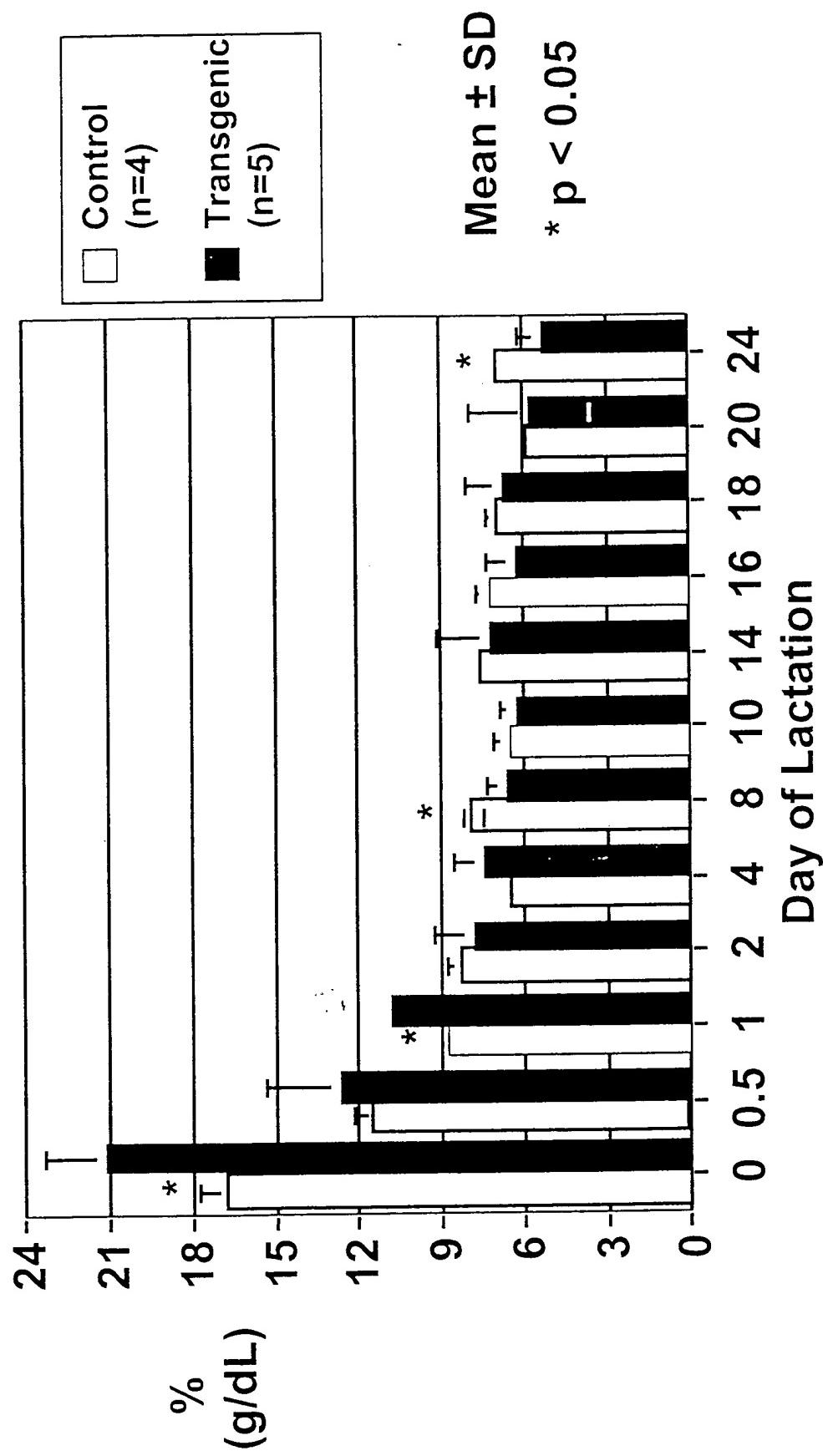


Figure 7

Animals Expressing Exogenous IGF-1 in  
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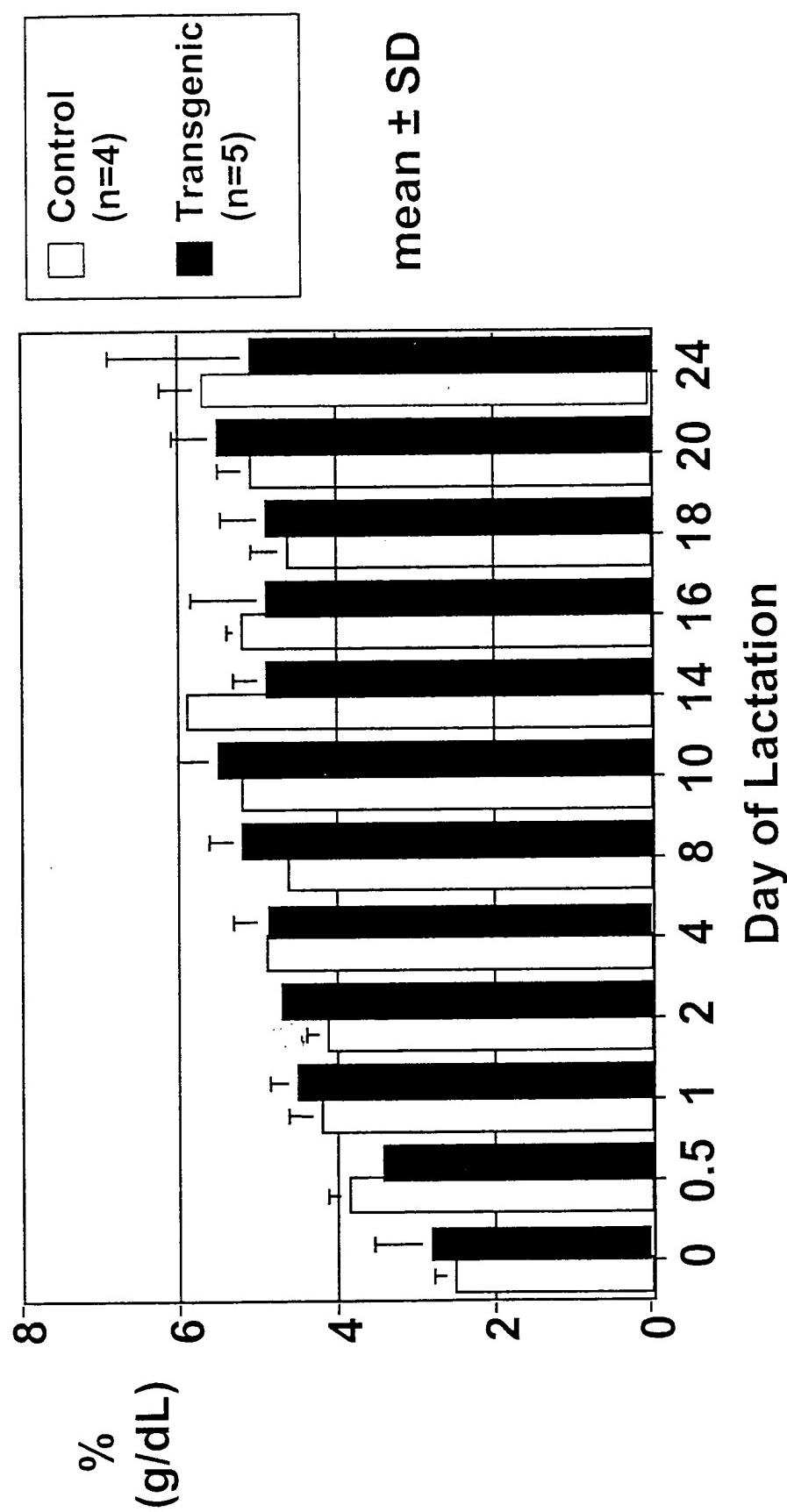


Figure 8

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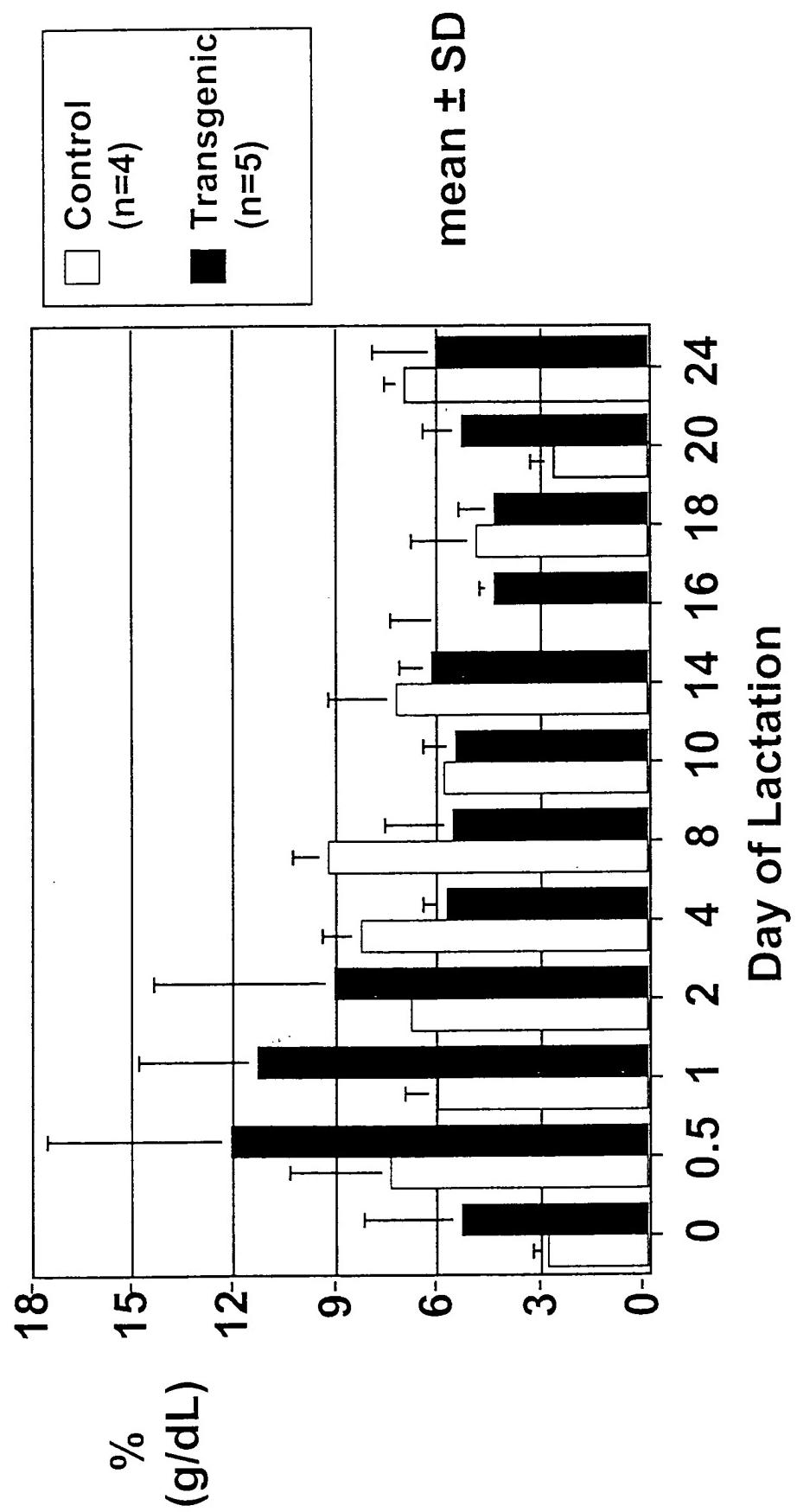


Figure 9

Animals Expressing Exogenous IGF-1 in  
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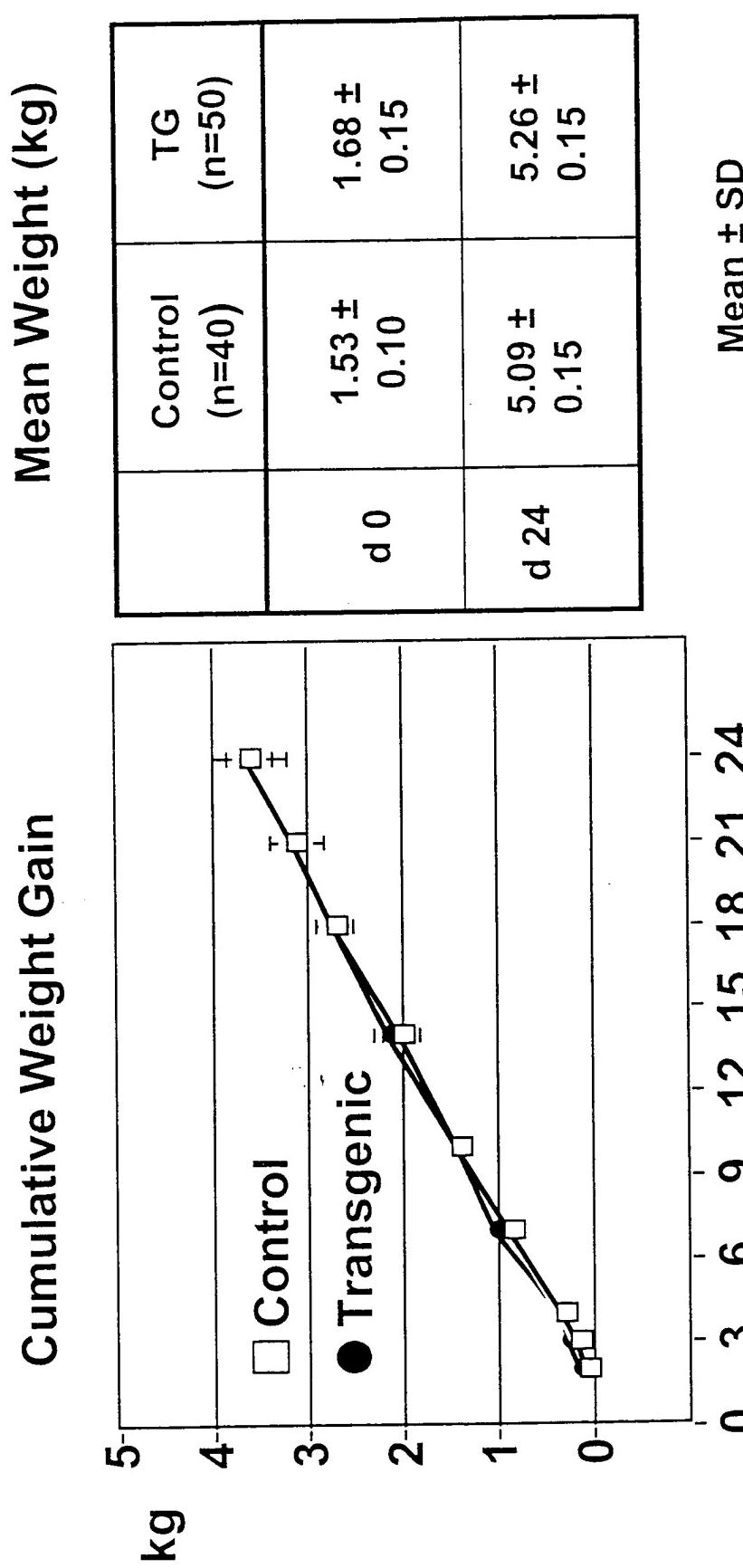


Figure 10

Animals Expressing Exogenous IGF-1 in  
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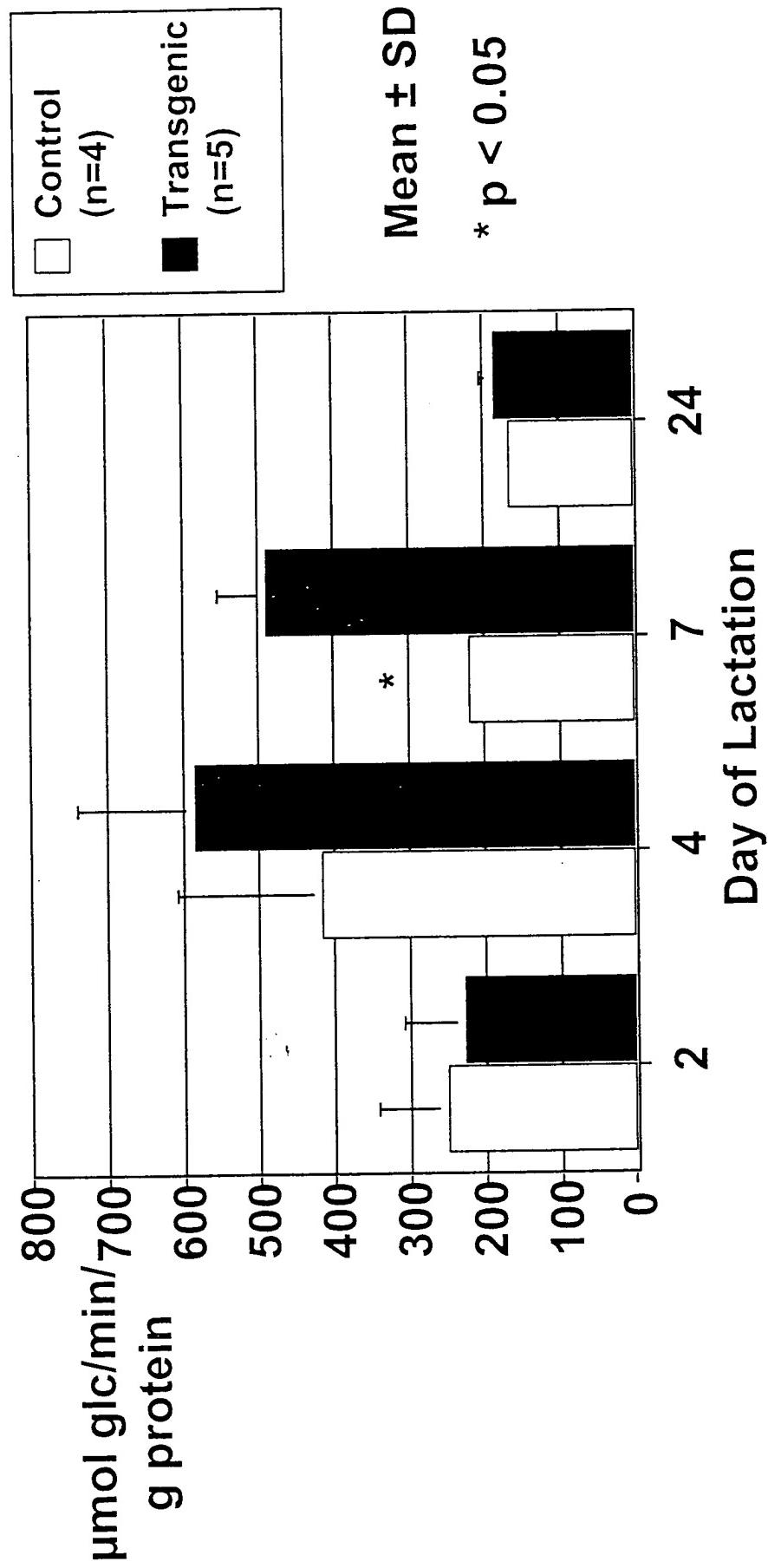


Figure 11